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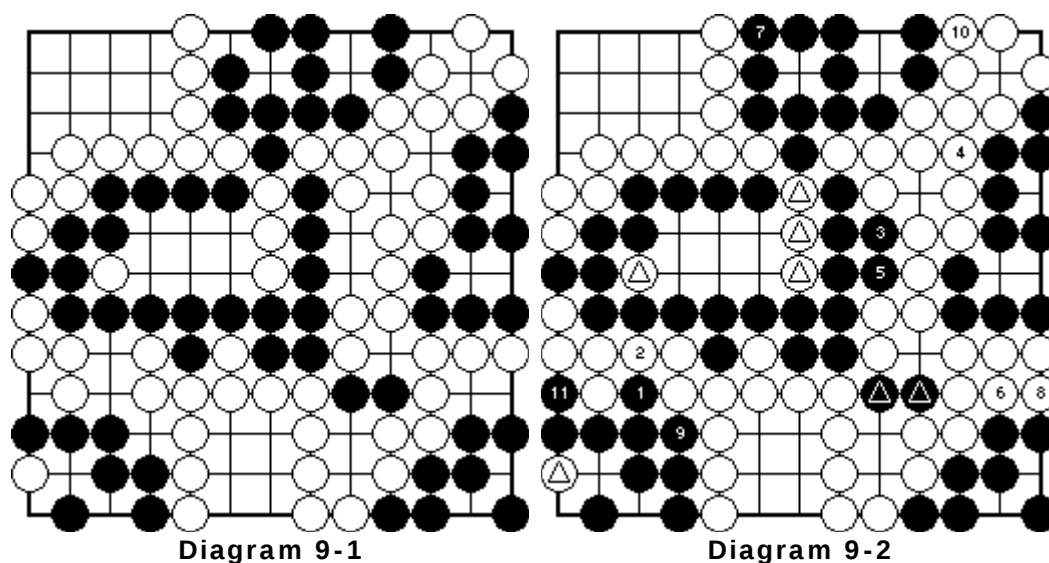
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How To Play Go

Lesson 9: Basic Endgame Techniques

9.1 Ending A Game

The *endgame* refers to the part of the game whereby the game is about to be concluded. It is usually a rather tedious process, with both players trying to make their territories more defined, and this part of the game can actually determine which player is the winner. Both players will try to grab the bits and pieces of small territories, attempt to increase their own territory while decreasing their opponent's territory.



We introduce this lesson with Diagram 9-1. It is a 13x13 board, and we see that both players' territories are already settled, and it is black's turn now. Diagram 9-2 shows the way for both players to end the game – black 1 to 11 each occupies a *neutral point*, which actually has no value but to aid calculation. After this both player passes, and the game ends. To start counting, we will remove all the dead stones, i.e. those stones marked with triangles.

Now we have come to Diagram 9-3. Remember that we are to compare both players' sums of territory and number of stones. Note that every single point on the board is either a stone or a player's territory (that's why we fill up neutral points), and hence the two sums add up to $13 \times 13 = 169$ points. We shall now count one player's sum – say white's (the selection is arbitrary). As the sum is the total of white's territory and number of white stones, we can add and remove white stones in white's area, and the sum will still be the same. That's because when we add a white stone, the number of white stones increase by one and white's territory decrease by one, and the total

will remain constant. So to make counting easier, we shall remove the white triangle stones and add white stones at points marked X, so that the territories would be in multiples of ten.

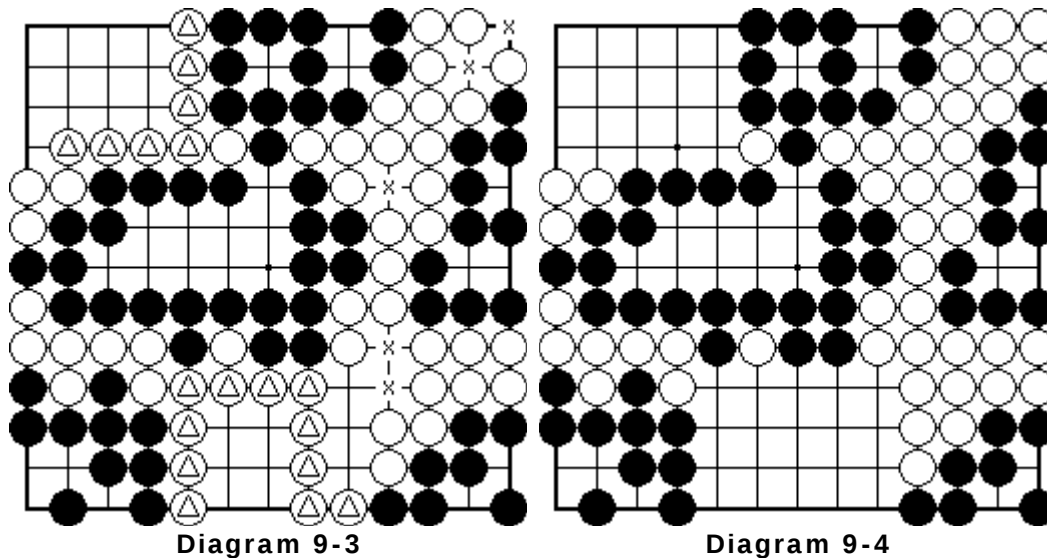


Diagram 9-4 shows what happens after these alterations. So white has 20 points at the upper-left, and 20 points at the bottom, i.e. white has 40 points of territory. We will then count the number of remaining white stones on the board – arranging them into tens would be a good idea – and white has 45 stones. So white has a sum of $45 + 40 = 95$ points. Hence black has a sum of $169 - 95 = 84$ points. Hence white wins this game.

9.2 Order Of Endgame Moves

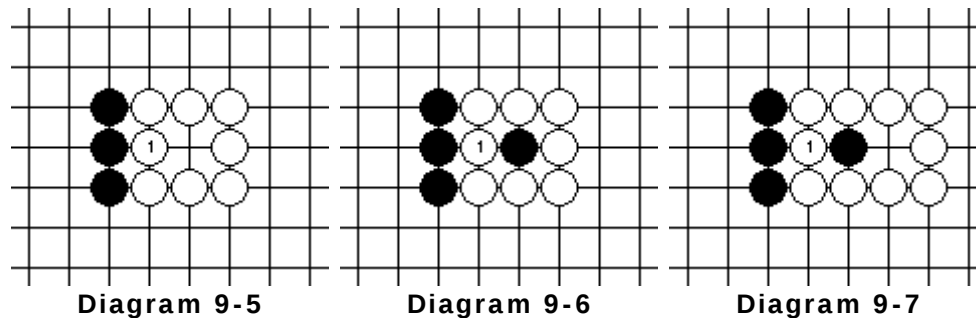
In general, we will play endgame moves that are worth more points first, i.e. if there are two places worth 5 points and 3 points respectively, we will grab the 5 point one first. However, what many Go players tend to forget that endgame moves can be classified into three types:

- Sente for both players.
- Sente for only one player.
- Gote for both players.

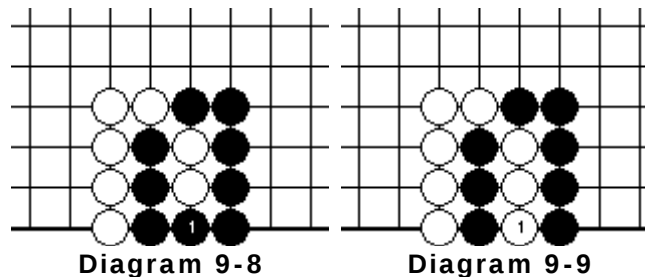
Sente is that after playing the move or sequence of moves, you still gain the initiative to play elsewhere. *Gote* is that after the playing the moves, your opponent need not answer you and can choose to play elsewhere, so he has the initiative. The three types above are in order of priority. Hence, endgame moves that are sente for both players has the biggest priority, and should be played first. Those that are gote for both players should be played last. That is, a move worth 4 points but sente for both players should be played before a move worth 10 points but gote for both players.

9.3 Value Of Endgame Moves

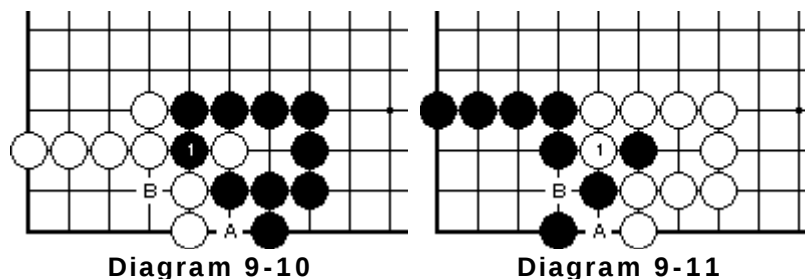
The preceding section is all theory – but how do we find out the value of endgame moves?



We shall start off with the most basic one: the value of white 1 in Diagram 9-5 is 1 point as it surrounds 1 point of territory. In Diagram 9-6, white 1 makes the black stone a *prisoner* (stone removed from the board) and surrounds a point. Since the number of black stones decreases by 1, so the value of white 1 is 1 (for territory) + 1 (for black prisoner) = 2 points. The value of white 1 in Diagram 9-7 is 3 points – 2 for territories and 1 for a black dead stone.

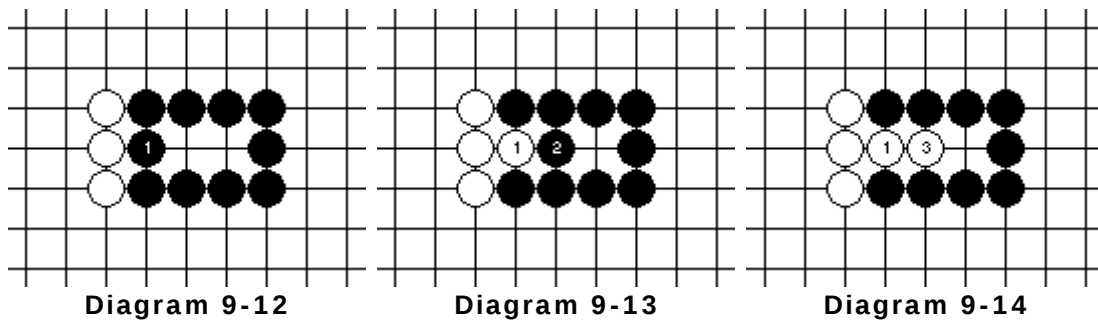


In Diagram 9-8, do you think that black 1 is worth 4 points? No. Suppose white plays first instead at 1 in Diagram 9-9, white will get 6 points. So the difference between black and white playing first is actually $4 + 6 = 10$ points, which is the correct value. That is, you need to take into account the loss/gain for both players when computing the value of a move.



We take a look at Diagram 9-10. Black 1 captures a white stone and gets 3 points in territory (including the dead black stone). However, black 1 also creates a cutting point such that when black plays at A, black threatens to capture the two white stones at B. Hence white will need to connect at B at some point of time, hence losing 1 point of territory. Therefore, the actual value of black 1 is $3 + 1 = 4$ points.

In Diagram 9-11, white 1 obtains 3 points in territory, and this also creates the possibility for white to atari at A, forcing black to connect at B, leaving white in sente. However, if black plays at A, it is gote, so it is assumed that white will get to play the atari at A. Hence black's territory is assumed to be reduced by 1 point, and the value of white 1 is $3 + 1 = 4$ points.



What is the value of black 1 in Diagram 9-12? After black plays 1, he gets 2 points in territory. When white plays at 1 in Diagram 9-13, black still can play at 2 and get 1 point in territory, but black 2 is gote and black may want to play elsewhere instead. In Diagram 9-14, black 2 choose to play at other place, letting white 3 to reduce black's territory to nil, but white 3 is also gote which may be better off playing at another bigger place. Hence, the probability of black playing at 2 in Diagram 9-13 or white playing at 3 in Diagram 9-14 is $\frac{1}{2}$. Hence we take the average and say that after white plays at 1 black has $\frac{1}{2}$ point of territory. Compared to 2 points in Diagram 9-12, the value of black 1 in Diagram 9-12 or white 1 in Diagram 9-13 is $2 - \frac{1}{2} = 1\frac{1}{2}$ points.

9.4 Hane At The Edge

The *hane* is a move played at a point diagonally next to another stone of the same player, and both stones are in contact of the same opponent's stone. The hane is usually an aggressive move commonly used to block the opponent's progress.

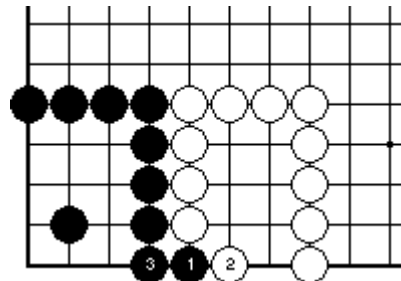


Diagram 9-15

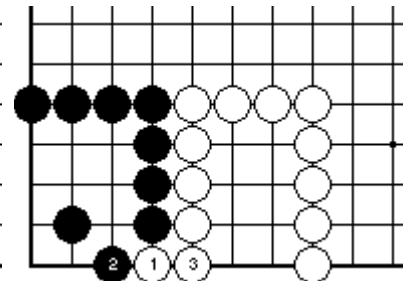


Diagram 9-16

Diagram 9-15 demonstrates a usual endgame technique. Black 1 hane at the edge to reduce white's territory, and because of the property of the edge, it is suicidal if white is to respond by playing at 3. Hence white ataris at 2 to secure the remaining territory, and black 3 connects. Now black has 11 points, and white has 7 points. Diagram 9-16 shows what happens when white plays first instead: white 1 hane and connects at 3. Black has 10 points, and white has 8 points. Notice that this place is gote for both players. If black plays first, black's territory is increased by $11 - 10 = 1$ point. If white goes first, white gains $8 - 7 = 1$ point. The value of this hane is $1 + 1 = 2$ points.

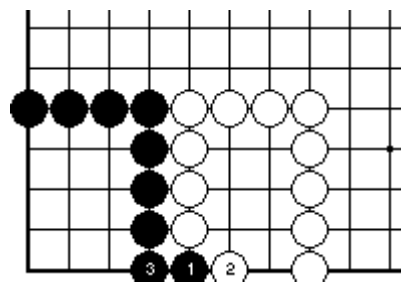


Diagram 9-17

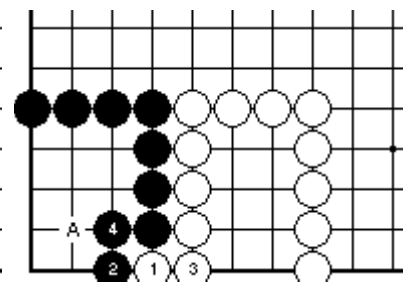


Diagram 9-18

The situation is a different when black hane at 1, and connects at 3 in Diagram 9-17. If white plays first in Diagram 9-18, black will have to connect at 4 (can play at A instead) to prevent white from cutting at 4 and capturing black 2. Hence if black plays first, he gains 2 points; if white plays first, he gains 1 point. That is, the value is 3 points. This place is sente for white, but gote for black.

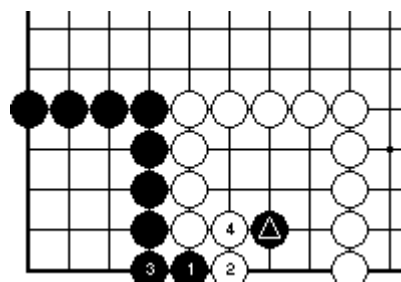


Diagram 9-19

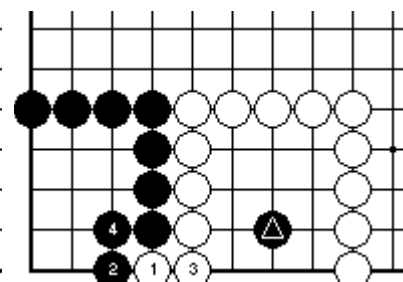


Diagram 9-20

When black plays first in Diagram 9-19, it is sente for black – white 4 needs to connect so that black will not cut at 4, capturing white 2 and saving the triangle stone. White first in Diagram 9-20 is also sente for white. If black plays first, he gains 2 points; if white plays first, he gains 2 points. So this place is worth 4 points. This place is sente for both players and should be grabbed early in the endgame.

So we notice that the hane at the edge can have varying values, depending on the configuration of the stones in the surrounding area.

[More Stuff] – Chinese Rule, Japanese Rule, Ing's Rule

There are three types of rules that are used commonly in this world: the Chinese rule, the Japanese rule and the Ing's rule.

The rule used in the How To Play Go lesson series is known as the Chinese rule. For the Japanese rule, the difference is in the way of counting. During the game, prisoners are not returned to the containers, but are kept separately. When counting, all dead stones and prisoners are filled in the territories of their respective territories, i.e. their territories are reduced respectively by the number of captured stones. When using the Japanese rules, *only the territories are compared, the number of stones is not compared*. Both rules used to have a komi of $5\frac{1}{2}$ points for 19x19 boards, but now $6\frac{1}{2}$ points or $7\frac{1}{2}$ points is common.

The Ing's rule is devised by the late Ing Chang-Ki (a Taiwanese), after he made a study of the various Go rules. The Ing's defined komi as 8 points, and have a fast way of counting, but it is effectively the same as the Chinese rule. Before the game, there should be exactly 180 black and white stones each, and there are special containers available (made specially for the Ing's rules) that makes it easy for the players to ensure that they have the correct number of stones. At the end of the game, after dead stones have been removed, four white stones will be placed in black's territory as komi. The prisoners and dead stones would be returned to their respective containers. Next the two players will fill up their territories with the stones from their containers. The player who uses up all the stones from his container, leaving unfilled territory would be the winner; while the opponent will have filled up his territory totally, leaving stones in his container, would be the loser.